

town, Conn.; Manchester, N. H. The occurrence of heavy frost was about seasonable at the several stations named.

The first light frost of the season was reported as follows: 1st, Sycamore, Ill.; Hampton, Iowa; Alpena, Cheboygan, and Grand Haven, Mich.; Rondout, N. Y.; Port Angeles, Wash.; Cadiz, Madison, and Valley Junction, Wis. 2d, Ottawa, Ill.; Cornish, Me.; Frederick, Md.; Royalston, Mass.; Thornville, Mich.; Berlin Mills, N. H.; Lowville, N. Y.; Garrettsville, Kenton, Lordstown, and North Lewisburg, Ohio; Blue Knob, Grampian, State College, and Wellsboro, Pa.; Northfield, Vt. 3d, Upper Mattole, Cal.; Vinton, Iowa; Westboro, Mass.; Helena, Mont. 4th, Fort Stevenson, N. Dak.

5th, San Jose, Cal.; Watseka, Ill.; Alta, Iowa; Rockland, Mich.; Moorhead and Saint Charles, Minn.; Fort Buford and Napoleon, N. Dak.; Huron and Rapid City, S. Dak. 6th, Chicago and Walnut, Ill.; Cedar Rapids, Delaware, near Dubuque, Independence, Iowa Falls, Monticello, and Washington, Iowa; Franklin, Ky.; Detroit, Mich.; Red Wing, Minn.; Hannibal, Mo.; Wauseon, Ohio; Black River Falls, Fond du Lac, near Green Bay, Koepenick, and Oconomowoc, Wis. 7th, Taunton, Mass.; Dyberry, Pa. 8th, Orono, Me.; East Canterbury, N. H.; Buffalo, N. Y.; Moxee, Wash.

9th, Haigler, Nebr. 11th, Denver, Colo.; Gove City, Kans.; Kimball and North Platte, Nebr. 12th, Panama, Iowa; near Allison, near Dodge City, and Downs, Kans.; Beatrice, Nebr. 13th, Corning, Larabee, and Logan, Iowa; Morris, Minn.; Princeton, Mo.; Crete, Dunning, Norfolk, Springview, and Valentine, Nebr.; Ellendale and Power, N. Dak. 14th, at points in Arkansas; Clarinda, College Springs, Des Moines, Hopeville, Mount Ayr, Murray, Sioux City, and Storm Lake, Iowa; Horton, near Leavenworth, Manhattan, Morse, and Topeka, Kans.; Bethany, Carrollton, Clinton, Columbia, East Lynne, Excelsior Springs, Gallatin, Grovedale, Harrisonville, Kansas City, La Monte, Langdon, Oregon, Phillipsburg, Pickering, Platte River, Poplar Bluff, Rea, Springfield, Stellada, and Vermont, Mo.; Auburn, Genoa, Harvard, Lexington, Lincoln, Marquette, Oakdale, and York, Nebr.; Grafton and Seymour, N. Dak.

15th, Seneca, Kans.; Staunton, Va. 16th, Amana, Ames, Belle Plaine, Eagle Grove, Marshall, and Williams, Iowa;

Grand Rapids, Mich.; Duluth, Minneapolis, and Saint Paul, Minn.; Bluefield, W. Va.; Viroqua, Wis.; Carlisle, Ill.; Fairfield, Iowa; Mottville, Mich.; Ithaca, N. Y.; Orangeville and near Sandusky, Ohio. 19th, Geneva, N. Y.; Looee, Utah. 20th, Manistee, Mich.; Winnemucca, Nev.; Oswego and Palermo, N. Y.; Wheeler, Ohio; Burlington, Vt. 21st, New Hartford, New London, and Voluntown, Conn.; Blue Hill and Vineyard Haven, Mass.; Manchester, N. H.; Blooming Grove and Quakertown, Pa.; Levan, Utah; Hartland, Vt.; Pine Hill, Wash. 22d, Ericson, Nebr.

24th, Easton, Pa. 26th, Grinnell, Iowa; Saint Vincent, Minn.; Austin, Tenn. 27th, Martinsville, Olney, near Springfield, and White Hall, Ill.; Indianapolis, Lafayette, Mauzy, and near Vevay, Ind.; Harrodsburg, Lexington, Matlock, Mumfordville, Shelbyville, and South Fork, Ky.; Gordonville and Olden, Mo.; Bakersville, N. C.; Gratiot, Tiffin, and Westerville, Ohio; Big Stone Gap and Marion, Va.; Central Station, W. Va. 28th, Lexington, Va. 29th, Williamsburg, Ky.; Williamstown, Mass.; Antrim, N. H.; Washington, N. C. 30th, Arcata and Forestville, Cal.; Amherst and Leicester, Mass.; Beverly, Bridgeton, and Egg Harbor City, N. J.; New York, N. Y.; Spencer, W. Va.

Frost injurious to vegetation was reported as follows: 1st, Grand Haven, Mich., slight damage to tender shoots of tomato plants. 2d, Blue Knob, Pa. (near), tomato plants killed. 5th, Fort Buford, N. Dak., cucumber vines and potato tops slightly injured; Bismarck, N. Dak., garden vegetation damaged. 7th, Blue Knob, Pa., tender vegetation frozen. 8th, Lander, Wyo., tender plants injured. 11th, Gering, Nebr., corn and potato plants killed; Lander, Wyo., all vegetation injured. 12th, Fort Stanton, N. Mex., garden vegetables injured. 13th, Fort Buford, N. Dak., garden vegetables badly damaged. 14th, Alta, Iowa, corn in low places injured; Oakdale, Nebr., tender vegetation and corn damaged; Huron, S. Dak., late vegetation injured. 14-15th, Reynolds, N. Dak., vegetation damaged slightly. 16th, Williams, Iowa, slight damage; Fayette, Iowa, buckwheat and corn injured. 19th, Sault Ste. Marie, Mich., slight damage to garden vegetables. 20th, Alpena, Mich., considerable damage to garden vegetables. 27th, Martinsville, Ill., corn nipped.

PRECIPITATION (expressed in inches and hundredths).

The distribution of precipitation over the United States and Canada for September, 1892, as determined from reports of about 2,000 stations, is exhibited on Chart III. In the table of miscellaneous meteorological data the total precipitation and the departure from the normal are given for regular stations of the Weather Bureau. The figures opposite the names of the geographical districts in the columns for precipitation and departure from the normal show, respectively, the averages for the several districts. The normal for any district may be found by adding the departure to the current mean when the precipitation is below the normal and subtracting when above.

The September rainfall is usually greatest over eastern and southern parts of the Florida Peninsula, on the North Carolina and Texas coasts, and in extreme northwestern Washington, where it exceeds 6.00, and the normal amount exceeds 4.00 along the south Atlantic and Gulf coasts, over a great part of Mississippi, Louisiana, and eastern Texas, and in an area extending from the interior of Iowa over northern Wisconsin, Upper Michigan, and northern Lower Michigan. In the Northwest and over the Rocky Mountain and plateau regions, except in parts of the northern plateau region and in

northern New Mexico, the September precipitation is less than 1.00, and generally over the western part of the plateau region and in central and southern California the normal amount for that month is less than 0.25.

In September, 1892, the monthly precipitation was greatest on the east coast of the Florida Peninsula, where it was 14.00 to 16.00, and more than 10.00 fell along the Atlantic coast from Charleston, S. C., to a point south of Jupiter, Fla., over the interior of southern Florida, and in extreme northwestern Washington. Over the greater part of the country east of the Mississippi River and along the immediate coast of Washington the monthly rainfall was 2.00 to 4.00; at Neah Bay, Wash., it was 10.91. Over the Rocky Mountain and plateau regions, in the Northwest, and on the middle and south Pacific coasts the monthly amount was less than 1.00; over the greater part of those districts less than 0.50 was reported; and in southern and southwestern California no rain fell.

DEPARTURES FROM NORMAL PRECIPITATION.

The monthly precipitation was generally deficient. Small areas of excess appeared in western Nova Scotia, on the south New England, south Atlantic, eastern Florida, and middle Gulf coasts, in central Arkansas, central Kentucky, and central Tennessee, in eastern Lower Michigan and southern Ontario, and on the north Pacific coast. The most marked de-

ficiency was noted on the Texas coast, where it was more than 6.00 at Galveston, and the deficiency was more than 3.00 on the Virginia, northern North Carolina, and western Florida coasts, and along the south shore of Lake Superior. The greatest excess in monthly precipitation occurred on the South Carolina, Georgia, and northern Florida coasts, where it was 4.00 to 6.00; the excess was more than 5.00 on the extreme northern coast of Washington, and was more than 3.00 at Port Huron, Mich.

Considered by districts the average percentage of the normal in districts where the precipitation was in excess was about as follows: North Pacific coast, 131; south Atlantic states, 119. In districts where the precipitation was deficient the percentage of the normal was about as follows: southern and middle plateau regions, 12; northeast slope of the Rocky Mountains, 28; Missouri Valley, 34; west Gulf states, 37; extreme northwest and middle-eastern slope of the Rocky Mountains, 38; southeast slope of the Rocky Mountains, 42; middle Pacific coast, 44; middle Atlantic states, 47; Key West, Fla., 55; upper lake region, 63; northern plateau region and upper Mississippi valley, 64; east Gulf states, 72; New England, 76; lower lake region, 87; Ohio Valley and Tennessee, 90.

The following table shows for certain stations, as reported by voluntary observers, (1) the average precipitation for September for a series of years; (2) the length of record during which the observations have been taken and from which the average has been computed; (3) the total precipitation for September, 1892; (4) the departure of the current month from the average; (5) and the extremes for September during the period of observation and the years of occurrence:

State and station.	(1) Average for the month of Sept.	(2) Length of record.	(3) Total for Sept., 1892.	(4) Departure from average.	(5) Extremes for September.			
					Greatest.		Least.	
					Am't.	Year.	Am't.	Year.
Arizona.								
Fort Apache	Inches 1.53	Years 16	Inches. 1.23	Inches. — 0.30	Inches. 5.41	1881 1883 1887	Inches. 0.30	1880
Fort Mohave	0.06	19	0.00	— 0.06	0.42	1883 1887	* 0.00	1874
Whipple Barracks	1.18	21	0.14	— 1.04	4.88	1887	0.00	1874
Arkansas.								
Keesee Ferry	4.51	11	1.79	— 2.72	12.08	1890	0.33	1891
California.								
Fort Bidwell	0.34	21	0.91	+ 0.57	1.60	1890	0.00	†
Riverside a	0.09	12	.....	.....	0.71	1890	0.00	*
Colorado.								
Las Animas	0.56	10	0.04	— 0.52	1.35	1883	0.00	1890
Florida.								
Merritts Island	8.11	14	8.04	— 0.07	23.78	1878	2.88	1883
Georgia.								
Forsyth	3.48	18	3.36	— 0.12	8.69	1888	0.10	1886
Idaho.								
Boise Barracks	0.37	19	0.18	— 0.19	1.36	1882 1881	T. 0.08	1886 1882
Fort Sherman	0.96	8	1.26	+ 0.30	1.95	1881	0.08	1882
Illinois.								
Centralia	3.38	12	.....	.....	6.32	1890	0.74	1883
Indiana.								
Lafayette	2.37	10	1.22	— 1.15	4.64	1885	0.30	1882
Indian Territory.								
Fort Supply	2.10	11	1.15	— 0.95	4.23	1873	0.20	1886
Iowa.								
Cresco	3.95	19	1.22	— 2.73	10.03	1881	0.82	1888
Kansas.								
Independence	3.62	20	0.82	— 2.80	9.71	1884	0.27	1883
Salina	1.91	10	0.83	— 1.08	3.75	1891	0.50	1888
Louisiana.								
Grand Coteau	3.53	8	0.60	— 2.93	10.58	1885	0.37	1888
Maine.								
Orono	3.42	21	3.91	+ 0.49	6.97	1888	0.95	1887
Maryland.								
Cumberland	2.94	21	2.36	— 0.58	8.50	1882	0.40	1873
Michigan.								
Kalamazoo	3.27	16	2.42	— 0.85	6.28	1879	0.53	1882
Missouri.								
Sedalia	4.76	11	4.01	— 0.75	10.54	1884	0.68	1891
Montana.								
Fort Custer	0.81	13	0.34	— 0.47	1.72	1890	0.03	1879
Nebraska.								
Fort Robinson	0.53	8	0.28	— 0.25	1.52	1891	0.00	1888
Genoa (near)	3.15	16	0.81	— 2.34	11.34	1887	0.29	1888
Nevada.								
Browns	0.09	21	0.00	— 0.09	0.87	1891	0.00	*
Carson City	0.26	15	0.26	— 0.00	1.01	1890	0.00	†
New Hampshire.								
Hanover	2.96	21	1.72	— 1.24	6.46	1882	0.27	1884

Departures from average precipitation—Continued.

State and station.	(1) Average for the month of Sept.	(2) Length of record.	(3) Total for Sept., 1892.	(4) Departure from average.	(5) Extremes for September.			
					Greatest.		Least.	
					Am't.	Year.	Am't.	Year.
New Mexico.	Inches.	Years	Inches.	Inches.	Inches.	1886	Inches	1892
Deming	1.63	10	0.08	— 1.55	4.36	1873	0.08	1892
Fort Wingate	1.29	20	0.04	— 1.25	3.60	1873	0.04	1892
New York.								
Coopersstown	3.33	21	3.57	+ 0.24	7.24	1890	1.17	1871
Platsburgh Barracks	2.64	21	1.68	+ 0.96	4.72	1882	0.51	1887
North Carolina.								
Lenoir	4.14	20	5.90	+ 1.76	8.50	1878	0.40	1871
Oklahoma.								
Fort Reno	3.05	9	1.93	— 1.12	5.13	1887	1.17	1891
Fort Sill	2.63	21	3.57	+ 0.94	5.60	1874	0.28	1879
Oregon.								
Bandon	1.87	14	1.30	— 0.57	5.12	1884	0.00	1890
Eola	1.59	21	1.81	+ 0.22	6.57	1884	0.00	1873, 1890
Pennsylvania.								
Dyberry	2.84	20	2.10	— 0.74	6.49	1888	1.04	1885
Grampian	3.33	15	3.12	— 1.21	5.87	1890	1.14	1885
Wellsboro	3.45	13	1.18	— 2.27	8.40	1880	1.18	1894
South Carolina.								
Statesburg	3.55	11	2.88	— 0.67	6.67	1884	0.75	1887
South Dakota.								
Fort Sully	0.95	21	0.53	— 0.42	4.09	1876	T.	1871
Texas.								
Austin	4.52	20	.....	.....	12.33	1886	0.00	1872
Silver Falls	2.05	6	1.73	— 0.32	5.58	1886	0.27	1888
Utah.								
Terrace	0.25	20	.....	.....	1.61	1884	0.00	*
Vermont.								
Stratford	3.57	19	1.55	— 2.02	6.30	1880	0.70	1884
Virginia.								
Dale Enterprise	4.19	12	2.97	— 1.22	12.24	1882	1.04	1885
Washington.								
Fort Townsend	1.27	17	0.66	— 0.61	5.79	1874	0.15	1890
West Virginia.								
Parkersburg	3.60	7	2.79	— 0.81	8.41	1890	1.72	1891
Wisconsin.								
Embarraas	4.29	21	3.00	— 1.29	11.60	1881	0.37	1871
Madison	3.18	20	3.29	+ 0.11	8.17	1881	0.38	1891
Wyoming.								
Fort Washakie	0.36	10	0.00	— 0.36	0.92	1891	0.00	1892

*Generally.

† Frequently.

PRECIPITATION, JANUARY TO SEPTEMBER.

For the period January to September, 1892, inclusive, the precipitation averaged about normal in the middle Atlantic and east Gulf states, the Ohio Valley and Tennessee, the upper lake region, the extreme northwest, in the Missouri Valley, on the northeastern and middle-eastern slopes of the Rocky Mountains, and over the middle plateau region. In the lower lake region and the upper Mississippi valley the precipitation was about two-tenths greater than usual, and in New England, the south Atlantic and west Gulf states, on the southeast slope of the Rocky Mountains, over the southern and northern plateau regions, and along the Pacific coast the precipitation was eight-tenths to nine-tenths of the normal amount for the period named.

YEARS OF GREATEST PRECIPITATION FOR SEPTEMBER.

The greatest precipitation for September was noted at points in western Kansas, northern New Mexico, southeastern Wyoming, western Colorado, and extreme northwestern Washington in 1891; in South Carolina and eastern Georgia in 1890; from the middle Mississippi valley to southern Lower Michigan in 1886; in the valley of the lower Columbia River in 1884; from the middle Missouri valley to Lake Superior in 1881; and from western Pennsylvania to the Virginia and North Carolina coasts in 1876.

YEARS OF LEAST PRECIPITATION FOR SEPTEMBER.

At Wellsboro, Pa., Galveston and San Antonio, Tex., Santa Fe, Deming, and Fort Wingate, N. Mex., Concordia, Kans., Denver and Montrose, Colo., and Fort Washakie, Wyo., the precipitation for the current month was the least ever reported for September during the respective periods of observation. The least precipitation for September was noted on the north Pacific coast in 1890; over the northern plateau region and from eastern Texas to the middle Missouri valley

in 1888; in the Red River of the North Valley and on the North Carolina coast in 1887; along the New England and middle Atlantic coasts in 1884; along the east Gulf coast in 1883; from the middle Missouri valley to western Lake Superior in 1882; and in the lower lake region in 1871 and 1877. In the last 21 years there have been 8 Septembers without rain at San Diego, Cal.; 6 at Los Angeles, Cal.; 5 at Red Bluff and Sacramento, Cal.; 4 at Winnemucca, Nev., and San Francisco, Cal.; 3 at Yuma, Ariz.; and 2 at Cheyenne, Wyo.

EXCESSIVE PRECIPITATION.

The following tables show, by states, the number of stations reporting monthly precipitation to equal or exceed 10.00; precipitation to equal or exceed 2.50 in 24 hours; and precipitation to equal or exceed 1.00 in 1 hour in September, 1892:

Monthly precipitation to equal or exceed 10.00.

State.	Number of stations.	State.	Number of stations.
Florida.....	12	Washington.....	2
South Carolina.....	3	North Carolina.....	1
Georgia.....	2	Oregon.....	1

Precipitation to equal or exceed 2.50 in 24 hours.

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
Michigan.....	16	12, 12-13, 13, 13-14, 6, 11-12, 12-13, 13, 17-19, 20-22, 21-22, 22.	Tennessee.....	4	2, 4-5, 9, 13-15, 5, 12.
Georgia.....	12		Louisiana.....	3	13.
Alabama.....	9	4-5, 12-13, 18, 18-19, 19, 19-20.	Ohio.....	3	10, 10-11.
Arkansas.....	8	11, 11-12, 12.	Illinois.....	2	8-9, 10, 11.
Missouri.....	8	10, 10-11, 27-28, 28.	Iowa.....	2	14-15.
Florida.....	7	1, 11, 15-16, 16, 16-17, 22, 29-30.	Massachusetts.....	2	13-14, 15.
Kentucky.....	7	11-12, 12, 12-13, 13, 19, 22.	New Hampshire.....	2	15-16, 24.
South Carolina.....	7	2, 12, 17-18, 18-19,	New York.....	2	10-11, 11-12.
Indiana.....	5	12-13, 13.	Texas.....	2	13, 20-21.
Maine.....	5	14-15.	Virginia.....	2	24-25.
North Carolina	5	12-13, 13, 18-19, 20-21, 20-22, 21-22.	Washington.....	1	—.
Mississippi.....	4	4-5, 5, 12.	Kansas.....	1	4.

Precipitation to equal or exceed 1.00 in 1 hour.

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
Florida.....	11	2, 7, 11, 12, 16, 17, 18, 20, 21, 22.	Arizona.....	1	6.
Georgia.....	4	1, 20, 22.	Kentucky.....	1	4.
Texas.....	3	3, 4, 9.	Louisiana.....	1	24.
Mississippi.....	2	4-5, 5.	Maryland.....	1	13-14.
Tennessee.....	2	8, 9.	Nebraska.....	1	20.
West Virginia.....	2	22.	North Carolina	1	20.
Alabama.....	1	18.	Wisconsin.....	1	22.

Table of excessive precipitation, September, 1892.

State and station.	Monthly rainfall to inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall 1 inch, or more, in one hour.	
		Amt.	Day.	Amt.	Time.
Alabama.	Inches.	Inches.		Inches.	h. m.
Bessemer.....		4.18	19		
Cordova.....		3.12	18-19		
Daphne.....				1.80	1 00
Decatur b.....		2.50	19		
Jasper.....		3.15	18		
Lynn.....		2.60	4-5		
Maysville.....		4.80	19		
Mobile.....		3.35	12-13		
Union Springs b.....		2.67	12-13		
Valley Head.....		3.10	19-20		

Table of excessive precipitation—Continued.

State and station.	Inches.	Inches.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall 1 inch, or more, in one hour.	
			Amt.	Day.	Amt.	Time.
Arizona.					Inches.	h. m.
Fort Apache.....					1-20	o 35
Arkansas.						
Camden b.....			2.50	12		
Dallas.....			3.62	11		
Little Rock.....			3.50	11-12		
Lonoke.....			6.12	11		
Madison.....			2.93	12		
Newport b.....			2.75	12		
Pine Bluff.....			3.46	12		
Searcy.....			2.80	11-12		
Florida.						
Amelia.....	10.35	3.00	22			
Avon Park.....	10.01				1-18	1 00
Brooksville.....					1-37	1 00
Eustis.....					1-23	0 25
Federal Point.....			13.51			
Gainesville.....					1-25	0 40
Do.....					1-00	0 30
Green Cove Springs.....	15.83	2.72	11			
Homeland.....		2.66	16		1-07	1 05
Hypoluxo.....	17.34	3.25	9		1-78	1 20
Do.....		5.00	15-16			
Jacksonville.....	14.04				1-35	1 00
Jupiter.....	14.43	4.20	16-17		1-05	1 00
Do.....					1-10	1 00
Key West.....					1-06	1 00
Kissimmee City.....			13.66			
Myers.....		13.66				
Ocala.....		15.56	2.80	I		
Saint Francis Barracks.....		14.50				
Saint Petersburg.....					1-53	1 10
Do.....					2-39	1 30
Titusville.....	16.67	3.20	16		1-00	1 11
Do.....		2.86	29-30		1-08	0 45
Georgia.						
Augusta.....			3.22	21-22	1.68	1 00
Dahlonega.....			3.08	12-13		
Darien.....			20.05	9-87	17-19	
Elberton.....			3.43		6	
Gainesville.....			2.52	12-13		
Louisville.....			2.95	22	2.00	0 25
Lumpkin.....			3.61	12-13		
Marietta.....			2.67	12-13		
Milledgeville.....			3.02	13		
Millen.....			5.20	20-22		
Newman.....			2.76	13		
Piscata.....					2.00	2 00
Savannah.....	10.95	3.18	11-12	1.00	1 00	20
Illinois.						
Walnut.....			3.18	10		
Warsaw.....			2.50	10-11		
Indiana.						
Degonia Springs.....			4.75	12-13		
Huntingburg.....			6.00	13		
Marion.....			4.55	12-13		
New Albany.....			2.84	13		
Point Isabel.....			2.75	13		
Iowa.						
Dubuque.....			2.57	8-9		
Keokuk.....			2.66	10-11		
Kansas.						
Rome.....			2.77	4		
Kentucky.						
Bowling Green.....			2.50	13		
Central City.....			2.86	12-13		
Earlington.....			3.03	12-13		
Franklin.....			2.52	11-12	2.00	0 30
Grand Rivers.....			2.83	12		
Pellville.....			2.73	13		
Princeton.....			2.66	12-13		
Louisiana.						
Emilie.....			3.00	12		
Farmerville.....			3.70	12		
Maurepas.....			4.70	5		
Sugar Experiment Station.....					1-71	1 30
Maine.						
Houlton.....			2.50	14-15		
Kents Hill.....			3.33	14-15		
Lewiston.....			2.62	14-15		
Mayfield.....			4.02	14-15		
Orono.....			3.00	14-15		
Maryland.						
Frederick.....			4.53	13-14	4-07	4 00
Massachusetts.						
Ashland.....			2.62	14-15		
North Billerica.....			2.60	14-15		
Michigan.						
Adrian.....			2.75	12		
Ann Arbor.....			2.86	13		
Birmingham.....			4.40	13-14		
Brown City.....			2.60	13		
Clinton.....			3.10	13		
Detroit.....			2.75	12-13		
Grape.....			2.94	13		
Hanover.....			2.55	13		
Jeddo.....			3.38	13		
Madison.....			4.79	13		
Port Huron.....			2.92	12-13		
Rawsonville.....			3.50	13		
Sand Beach.....			2.80	13		
Thornville.....			3.08	13		

Table of excessive precipitation—Continued.

State and station.	Monthly rainfall to inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.			Rainfall of 1 inch, or more, in one hour.			Station.	Maximum rainfall in one hour or less.					
		Amt.	Day.	Amt.	Time.	Day.	5 min.		Date.	10 min.	Date.	1 hour.	Date.	
Michigan—Continued.	Inches.	Inches.		Inches.	h. m.									
Washington.....		3.34	13					Atlanta, Ga.....	0.17	13	0.24	13	0.90	13
Ypsilanti.....		4.18	13					Bismarck, N. Dak.....	0.02	8	0.03	8	0.13	8
Northfield.....	Mississippi.	2.75	?					Boston, Mass.....	0.08	14	0.10	14, 26	0.40	14
Greenville.....		6.68	4-5	6.68	6 30	4-5		Buffalo, N. Y.....	0.11	15	0.15	10	0.21	10
Macon.....				2.00	2 00	5		Cincinnati, Ohio.....	0.25	4	0.40	4	0.55	4
Okolona.....		3.90	5					Chicago, Ill.....	0.02	10	0.04	10	0.17	10
Pontotoc.....		6.82	12					Cleveland, Ohio.....	0.21	10	0.22	10	0.34	5
Waynesboro b.....	Missouri.	2.88	5					Denver, Colo.....						
Fulton.....		2.71	10					Detroit, Mich.....	0.17	4	0.24	4	0.35	13
Glasgow.....		2.86	27-28					Dodge City, Kans.....	0.34	3	0.58	3	0.89	3
Independence.....		2.80	10					Duluth, Minn.....	0.03	9	0.05	9	0.10	9
Louisiana Bridge.....		2.80	10-11					Eastport, Me.....	0.04	26	0.08	26	0.23	15
Mexico.....		2.75	10					Galveston, Tex.....						
Stellada.....		2.52	28					Indianapolis, Ind.....	0.25	19	0.30	19	0.38	19
Wellsboro.....		3.00	10-11					Jacksonville, Fla.....	0.54	14	0.59	14	1.35	7
Wheatland.....	Nebraska.	2.65	27-28					Jupiter, Fla.....	0.30	2	0.55	2	1.10	16
Hayes Center.....	New Hampshire.	3.13	20	3.13	3 00	20		Kansas City, Mo.....	0.25	10	0.33	10	0.72	4
Mount Washington.....		2.76	13-14					Key West, Fla.....	0.24	23	0.45	23	1.06	23
North Conway.....	New York.	3.41	14-15					Marquette, Mich.....	0.03	9	0.05	9	0.13	9
Utica.....		2.50	24					Memphis, Tenn.....	0.30	4	0.40	4	0.41	4
West Point.....	North Carolina.	3.53	15-16					Milwaukee, Wis.....	0.02	7	0.04	7	0.20	7
Columbus.....		15.74	6-10	13				New Orleans, La.....	0.20	4	0.29	4	0.63	4
Do.....		6.94	21-22					New York, N. Y.....	0.20	14	0.37	14	0.52	14
Horse Cove.....		5.83	12-13					Norfolk, Va.....	0.35	25	0.60	25	0.76	25
Leomin.....		4.50	20-22					Philadelphia, Pa.....	0.31	14	0.43	14	0.65	14
Newbern.....		3.05	18-19					Pittsburg, Pa.....	0.17	14	0.34	14	0.89	14
Wilmington.....	Ohio.	4.23	20-21	3.64	2 11	20		Portland, Oregon.....						
Hedges.....		2.77	13					Saint Louis, Mo.....	0.05	4	0.07	4	0.22	4
Montpelier.....		3.22	13					Saint Paul, Minn.....	0.09	8	0.15	8	0.40	8
Waauseon.....	Oregon.	2.59	13					Salt Lake City, Utah*						
Glenora.....	Pennsylvania.	10.27	5.58	22				San Diego, Cal.*						
Aqueduct.....	South Carolina.	3.70	13-14					San Francisco, Cal.*						
Allendale.....		4.13	19					Savannah, Ga.....	0.25	12	0.42	6	1.00	20
Batesburg.....		4.12	22					Tampa, Fla.....	0.20	2	0.32	30	0.56	29
Charleston.....		11.77	2.72	17-18				Washington, D. C.....	0.20	23	0.30	23	0.60	14
Green Pond.....		12.84	2.70	19				Wilmington, N. C.....	0.47	20	0.74	20	2.07	20
Hardeeville.....		2.76	2											
Port Royal.....		3.06	12											
Do.....		3.33	18-19											
Do.....		4.25	22											
Saint Stephens.....	Tennessee.	2.60	13											
Bethel Springs.....		3.26	13											
Charleston.....		3.99	9	3.99	3 00	9								
Nashville.....				1.03	1 01									
Nunnelly.....		3.12	4-5											
Waynesboro.....	Texas.	2.75	20											
Childress.....				1.25	0 40									
Forestdburg.....				1.00	1 00									
Hallettsville.....				1.74	1 00									
Quanah.....		2.50	10-11											
Tyler.....	Virginia.	5.99	11-12											
Clarksville.....		2.81	20-21											
Standardsville.....	Washington.	3.20	13											
Neah Bay.....		10.91	3.05	24-25										
Tatoosh Island.....	West Virginia.	10.19	2.90	24-25										
Davis.....				1.53	0 50									
Grafton.....				1.00	1 00									
Harpers Ferry.....	Wisconsin.	2.56	13											
Green Bay.....				1.09	1 00									
Juneau.....		3.27	9											

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Indiana.				1.28	1 00	19
Marion.....	Missouri.					
Rolla.....	New York.	3.20	9			

MAXIMUM RAINFALL IN ONE HOUR OR LESS.

The following table is a record of the heaviest rainfall during September, 1892, for periods of five and ten minutes and one hour, as reported by regular stations of the Weather Bureau furnished with self-registering gauges:

Maximum rainfall in one hour or less.

Station.	Maximum fall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
Atlanta, Ga.....	0.17	13	0.24	13	0.90	13
Bismarck, N. Dak.....	0.02	8	0.03	8	0.13	8
Boston, Mass.....	0.08	14	0.10	14	0.40	14
Buffalo, N. Y.....	0.11	15	0.15	10	0.21	10
Cincinnati, Ohio.....	0.25	4	0.40	4	0.55	4
Chicago, Ill.....	0.02	10	0.04	10	0.17	10
Cleveland, Ohio.....	0.21	10	0.22	10	0.34	5
Denver, Colo.....						
Detroit, Mich.....	0.17	4	0.24	4	0.35	13
Dodge City, Kans.....	0.34	3	0.58	3	0.89	3
Duluth, Minn.....	0.03	9	0.05	9	0.10	9
Eastport, Me.....	0.04	26	0.08	26	0.23	15
Galveston, Tex.....						
Indianapolis, Ind.....	0.25	19	0.30	19	0.38	19
Jacksonville, Fla.....	0.54	14	0.59	14	1.35	7
Jupiter, Fla.....	0.30	2	0.55	2	1.10	16
Kansas City, Mo.....	0.25	10	0.33	10	0.72	4
Key West, Fla.....	0.24	23	0.45	23	1.06	23
Marquette, Mich.....	0.03	9	0.05	9	0.13	9
Memphis, Tenn.....	0.30	4	0.40	4	0.41	4
Milwaukee, Wis.....	0.02	7	0.04	7	0.20	7
New Orleans, La.....	0.20	4	0.29	4	0.63	4
New York, N. Y.....	0.20	14	0.37	14	0.52	14
Norfolk, Va.....	0.35	25	0.60	25	0.76	25
Philadelphia, Pa.....	0.31	14	0.43	14	0.65	14
Pittsburg, Pa.....	0.17	14	0.34	14	0.89	14
Portland, Oregon.....						
Saint Louis, Mo.....	0.05	4	0.07	4	0.22	4
Saint Paul, Minn.....	0.09	8	0.15	8	0.40	8
Salt Lake City, Utah*						
San Diego, Cal.*						
San Francisco, Cal.*						
Savannah, Ga.....	0.25	12	0.42	6	1.00	20
Tampa, Fla.....	0.20	2	0.32	30	0.56	29
Washington, D. C.....	0.20	23	0.30	23	0.60	14
Wilmington, N. C.....	0.47	20	0.74	20	2.07	20

Excessive monthly precipitation.

State.	No. years noted.	State.	No. years noted.
Florida.....	20	Arkansas.....	1
Texas.....	13	Connecticut.....	10
North Carolina.....	11	District of Columbia.....	1
Georgia.....	9	Illinois.....	1
Iowa.....	8	Indiana Territory.....	1
New Hampshire.....	6	Kentucky.....	1
Alabama.....	6	Maryland.....	1
Louisiana.....	6	Minnesota.....	1
Kansas.....	5	Oregon.....	1
Mississippi.....	5	Vermont.....	1
Virginia.....	5	Arizona.....	1
South Carolina.....	5	California.....	1
Indiana.....	4	Colorado.....	1
Massachusetts.....	4	Tennessee.....	1
Nebraska.....	4	Maine.....	1
New Jersey.....	4	West Virginia.....	1
Pennsylvania.....	4	The Dakotas.....	1
Missouri.....	3	New Mexico.....	1
Wisconsin.....	3	Idaho.....	1
Washington.....	3	Montana.....	1
Ohio.....	2	Delaware.....	1
Michigan.....	2	Rhode Island.....	1
New York.....	2	Utah.....	1
Wyoming.....	2	District of Columbia.....	1

Excessive daily precipitation (24 hours).

North Carolina.....	20	Louisiana.....	11
Texas.....	19	Wisconsin.....	10
Florida.....	18	Connecticut.....	9
Georgia.....	16	The Dakotas.....	8
Mississippi.....	16	Pennsylvania.....	8
South Carolina.....	16	New Jersey.....	8
Kansas.....	14	Kentucky.....	8
Virginia.....	14	Minnesota.....	8</

Excessive daily precipitation—Continued.

State.	No. years noted.	State.	No. years noted.
Oregon	4	Delaware	
West Virginia	4	Montana	
Vermont	3	New Mexico	
Maine	3	Rhode Island	
Washington	3	Idaho	
Arizona	2	Nevada	
California	1	Utah	
Colorado	1	Wyoming	

Excessive hourly precipitation.

Texas	16	Missouri	
Florida	14	Minnesota	
Georgia	11	New Hampshire	
Nebraska	10	Wisconsin	
North Carolina	8	The Dakotas	
Illinois	7	District of Columbia	
Kansas	6	Maine	
New York	6	Massachusetts	
Tennessee	6	New Jersey	
Louisiana	6	Vermont	
South Carolina	5	Connecticut	
Alabama	5	Maryland	
Iowa	4	California	
Michigan	4	Colorado	
Pennsylvania	4	Delaware	
Arizona	4	Idaho	
Mississippi	4	Montana	
Ohio	3	Nevada	
Indian Territory	3	New Mexico	
Virginia	3	Oregon	
Kentucky	3	Rhode Island	
West Virginia	3	Utah	
Arkansas	2	Washington	
Indiana	2	Wyoming	

The following tables give exceptionally heavy monthly, daily, and hourly precipitation reported for September during the last 22 years:

Monthly.

Station and state.	Am't.	Year.	Station and state.	Am't.	Year.
Brownsville Tex.	Inches.		Mayport, Fla.	Inches.	
30.57	1886		23.24	1885	
27.41	1885		22.08	1885	
26.50	1881		21.15	1890	
26.01	1885		21.12	1873	
25.98	1882		20.44	1883	
25.10	1878		20.10	1877	
23.90	1871		20.05	1892	
23.78	1878				

Daily (24 hours).

Station and state.	Amount.	Date.	Station and state.	Amount.	Date.
Paterson, N. J.	Inches.		Columbus, N. C.	Inches.	
17.90	21-24, 1882		Homeland, Fla.	6.94	21-22, 1892
13.00	15-16, 1881		Pontotoc, Miss.	6.85	1, 1890
10.60	1, 1887		Greenville, Miss.	6.82	12, 1892
9.87	17-19, 1882		Milledgeville, Ga.	6.68	4-5, 1892
9.52	21, 1885		South Canisteo, N. Y.	6.50	28, 1890
9.32	20-21, 1891		Columbia, Tex.	6.48	10, 1890
9.09	9, 1878		Hot Springs, Ark.	6.47	10-11, 1890
8.50	21, 1887		Lonoke, Ark.	6.45	22-23, 1890
8.35	10, 1888		Columbus, N. C.	6.12	11, 1892
8.22	25, 1880		Brazoria, Tex.	6.10	13, 1892
7.90	21-22, 1889		Huntingburg, Ind.	6.03	24, 1891
7.84	4, 1889		Tyler, Tex.	6.00?	13, 1892
7.32	27, 1885		Horse Cove, N. C.	5.99	11-12, 1892
7.52	10-11, 1880		Minden, La.	5.83	12-13, 1892
7.50	17-18, 1889		Glenora, Oregon	5.72	22, 1890
7.50	23, 1882		Midland, Tex.	5.58	22, 1892
7.41	15, 1880		Charleston, S. C.	5.50	20-30, 1891
7.40	10, 1888		Wedgewood, N. Y.	5.42	24-25, 1890
7.30	10, 1883		New Braunfels, Tex.	5.34	10, 1890
7.02	12, 1878		Centerville, Mo.	5.27	8, 1890
7.00	18, 1877		Brewer Mine, S. C.	5.20	8-9, 1890
7.00	12, 1871		Millen, Ga.	5.20	13-14, 1890
7.00	17, 1875		Hypoluxo, Fla.	5.20	20-22, 1892
7.00	12, 1884			5.20	15-16, 1892

One hour and less.

Station and state.	Amount.	Time.	Date.
Demos, Ohio	2.00	0 05	5, 1890
Jacksonville, Fla.	0.62	0 05	6, 1891
Do.	0.54	0 05	14, 1892
Wilmington, N. C.	0.47	0 05	20, 1892
Key West, Fla.	0.45	0 05	20, 1891
Jupiter, Fla.	0.40	0 05	8, 1891
Galveston, Tex.	0.38	0 05	16, 1891
New York, N. Y.	0.35	0 05	17, 1890
Savannah, Ga.	0.35	0 05	12, 1890
Do.	0.35	0 05	24, 1890
Norfolk, Va.	0.35	0 05	25, 1892
Dodge City, Kans.	0.34	0 05	3, 1892
Norfolk, Va.	0.32	0 05	14, 1890
Philadelphia, Pa.	0.31	0 05	14, 1892
Jupiter, Fla.	0.30	0 05	2, 1892
Memphis, Tenn.	0.30	0 05	4, 1892
Jupiter, Fla.	0.30	0 05	5, 1890
Washington, D. C.	0.30	0 05	11, 1890
Cincinnati, Ohio	0.25	0 05	4, 1892
Indianapolis, Ind.	0.25	0 05	19, 1892
Kansas City, Mo.	0.25	0 05	10, 1890
Savannah, Ga.	0.25	0 05	12, 1892
New York, N. Y.	0.25	0 05	21, 1892
Kirkwood, S. C.	1.50	0 10	14, 1890
Jacksonville, Fla.	1.18	0 10	6, 1891
Pine Apple, Ala.	1.10	0 10	5, 1890
Wilmington, N. C.	0.74	0 10	20, 1892
Norfolk, Va.	0.60	0 10	25, 1892
Jacksonville, Fla.	0.59	0 10	14, 1892
Dodge City, Kans.	0.58	0 10	3, 1892
Jupiter, Fla.	0.55	0 10	2, 1892
Alpena, Mich.	1.05	0 11	10, 1894
Omaha, Nebr.	1.00	0 15	28, 1881
Howe, Texas	3.00	0 20	10, 1890
Emilie, La.	1.24	0 20	3, 1891
Fort Riley, Kans.	1.07	0 20	15, 1890
Louisville, Ga.	2.00	0 25	22, 1892
Franklin, Ky.	2.00	0 30	4, 1892
Charleston, S. C.	2.00	0 30	13, 1877
Cedar Keys, Fla.	1.70	0 30	2, 1888
Rio Grande City, Tex.	1.93	0 35	26, 1879
Monroe, La.	4.12	0 45	22, 1890
Fort Davis, Tex.	2.42	0 45	9, 1880
Fort Meade, Fla.	3.50	1 00	6, 1891
Luling, La.	9.32	4 10	20-21, 1891

SNOW (in inches and tenths).

Snow fell at Mount Washington, N. H., on the 6th, 7th, 26th, and 27th, the total depth for the month measuring 4. Snow fell in the mountains near Lander, Wyo., and Baker City, Oregon, on the 23d. Snow was reported at Fort Yellowstone, Wyo., on the 24th. A light flurry of snow occurred at Middletown, Conn., on the 27th.

HAIL.

Description of the more severe hailstorms of the month is given under "Local storms." Hail was reported as follows: 2d, Colorado. 3d, Colorado, Kansas, and Nebraska. 4th, New Mexico. 6th, Arizona and South Dakota. 7th, Iowa, Missouri, and Nebraska. 8th, Colorado, Iowa, Kansas, Nebraska, South Dakota, and Tennessee. 9th, Illinois, Indiana, Iowa, Louisiana, Michigan, Minnesota, Missouri, and South Dakota. 10th, Colorado, Illinois, Iowa, Kansas, Missouri, Nebraska, New Mexico, Ohio, Pennsylvania, South Dakota, Washington, and Wisconsin. 12th, Washington. 14th, Indiana and Ohio. 15th, Ohio. 20th, Kansas, Kentucky, and Nebraska. 21st, Iowa and Nebraska. 22d, Iowa. 23d, Oregon and Washington. 24th, New York and Pennsylvania. 25th, California, Delaware, Indiana, Maryland, Michigan, New Jersey, New York, Ohio, and Pennsylvania. 26th, California, Georgia, Massachusetts, New York, and Vermont. 27th, Missouri, Nebraska, and Pennsylvania. 28th, Illinois, Iowa, and Missouri. 29th, Idaho and Texas. 30th, Utah.